



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/828,978

04/10/2001

Rainer Uhl

740105-70

7149

22204

7590

09/27/2004

NIXON PEABODY, LLP

401 9TH STREET, NW

SUITE 900

WASHINGTON, DC 20004-2128

EXAMINER

FINEMAN, LEE A

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/828,978

Applicant(s)

UHL, RAINER

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-26,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26,29 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to the remarks filed 8 July 04. Claims 17-26 and 29-30 are pending.

#### ***Claim Objections***

1. Claim 17 is objected to because of the following informalities: In line 11, "epi-flouresence" is incorrectly spelled and should be --epi-fluorescence--. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 17-26 and 29-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 has the limitations "a dichroic beam splitter for reflecting epi-fluorescent excitation light produced by said light source," "wherein said light source is adapted to allow a change between different wavelengths for producing, alternately, transmitted light illumination and epi-fluorescence illumination" and "wherein said dichroic beam splitter is essentially impermeable to said epi-fluorescent excitation light and essentially permeable with respect to fluorescent light and light for said transmitted light illumination." It is unclear how the dichroic

Art Unit: 2872

beam splitter can both reflect (since there is only one light source) AND be essentially permeable to said transmitted light illumination. The dependent claims inherit the deficiencies of the claims from which they depend.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Modlin et al., International Publication No. WO 00/06991.

Modlin et al. disclose in figs. 5-7 and 11, a microscope for transmission viewing comprising a light source (100) for producing a light beam, an objective lens (117) positioned for focusing the light beam on the specimen (page 16, line 18-19) area for illumination and a reflector means (fig. 11, unnumbered) to reflect the light back through the illuminated area of the specimen, and a dichroic beam splitter (fig. 11, unnumbered) for reflecting epi-fluorescence excitation light produced the light source into the objective lens (column 33, lines 1-16); wherein the light source is adapted to allow a change between different wavelengths for producing, alternately, transmitted light illumination and epi-fluorescence illumination (100 with 104 and 106) and wherein said dichroic beam splitter is essentially impermeable to said epi-fluorescent excitation light and essentially permeable with respect to fluorescent light and light for said transmitted light illumination (fig. 11 and column 33, lines 1-22).

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 18-19, 21-22, 24, 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modlin et al. in view of Doyle, U.S. Patent No. 4,758,088.

Modlin et al. disclose the claimed invention except for the reflector means comprising a body having a concave surface and is hemispherically-shaped with an aperture for allowing particles flung from the specimen by action of the light beam to be captured, which reflects essentially all of the illumination the light beam, which includes fluorescent light, and at least a portion of the concave surface is reflective to at least a portion of the illumination light to produce oblique illumination of the specimen and a transparent holder for supporting the specimen on a surface facing away from the objective lens. Doyle teaches a microscope (fig. 3) comprising a light source (not shown but producing beam 78), an objective lens (34) positioned for focusing the light beam on the specimen (80) area for illumination and a reflector means (84) to reflect the light back through the illuminated area of the specimen, and a beam splitter (column 4, lines 10-11) for reflecting light from the light source into the objective lens (34), wherein said reflector means (84) comprises a body having a concave surface and is hemispherically-shaped with an aperture for allowing particles flung from the specimen by action of the light beam to be captured, which reflects essentially all of the illumination the light

Art Unit: 2872

beam, which includes fluorescent light, and at least a portion of the concave surface is reflective to at least a portion of the illumination light to produce oblique illumination of the specimen (fig. 3) and a transparent holder (4) for supporting the specimen on a surface facing away from the objective lens (34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflector means of Modlin to be hemispherically-shaped with a concave surface as suggested by Doyle prevent stray light and therefore increase intensity of the image.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Modlin et al. in view of Doyle as applied to claim 20 above and further in view of Allingham, U.S. Patent No. 3,497,377.

Modlin et al. in view of Doyle as applied to claim 20 above discloses the claimed reflector means except for an explicit written teaching that the body is transparent. Allingham teaches that a reflector means, or more commonly, a mirror is a surface having transparent characteristics with a backing of high reflectivity and opaqueness (column 1, lines 32-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the reflector of Modlin et al. in view of Doyle so as to include a body of transparent material to protect the reflective surface of the reflector means from damage.

9. Claims 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable Modlin et al. in view of Lanni et al., U.S. Patent No. 5,801,881.

Art Unit: 2872

Regarding claims 23 and 25, Modlin et al. discloses the claimed invention except for use of an immersion fluid to optically couple the holder to the reflector means and to optically couple the objective lens to the specimen. Lanni et al. teach the use of an immersion fluid (not numbered) in figure 5 to optically couple a transparent holder (4) to the reflector means (16) and to optically couple the objective lens (8) to the specimen (2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Modlin et al. to include immersion fluid to reduce losses and permit better image quality.

10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Modlin et al. in view of Pinkel et al., U.S. Patent No. 5,982,534

Modlin et al. discloses the claimed invention except for at least a portion of said reflector mean including a nonreflecting surface for transmitting laser light being emitted from outside a boundary surface of the reflector means to a reflecting boundary surface to the surface of the specimen that reflects the laser light at an angle such that total refraction of the laser light occurs at the boundary surface to the surface of the specimen by which fluorescent excitation of the specimen occurs. Pinkel et al. teach a reflective means being a concave, hemispherically shaped body (fig. 2, 205, 207 and column 11, lines 1-13) and at least a portion of said reflector mean including a nonreflecting surface (123) for transmitting laser light (103, column 7, line 57) being emitted from outside a boundary surface of the reflector means to a reflecting boundary surface to the surface of the specimen that reflects the laser light at an angle such that total refraction of the laser light occurs at the boundary surface to the surface of the specimen by which fluorescent

Art Unit: 2872

excitation of the specimen occurs (column 7, lines 22-30 and 49-51). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Modlin et al. to have a laser in the manner of Pinkel et al. to provide a more flexible system and enable multi-modal viewing of the sample.

### ***Response to Arguments***

11. Applicant's arguments, see page 2, paragraph 3, filed 8 July 2004, with respect to claims 17-26 and 29-30 have been fully considered and are persuasive. The rejection of claims 17-26 and 29-30 has been withdrawn. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made using Modlin et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF

September 23, 2004

  
MARK A. ROBINSON  
PRIMARY EXAMINER